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10/608,108	06/30/2003	Hirotake Ando	03560.003330	1047

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EXAMINER	
PHAM, VAN T	

ART UNIT	PAPER NUMBER
2656	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,108	ANDO, HIROTAKE	
	Examiner	Art Unit	
	VAN T. PHAM	2656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6,8,11-16,18 and 21 is/are rejected.

7)☒ Claim(s) 7,9,10,17,19 and 20 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakamoto et al (US 6,606, 284).

Regarding claim 1, Sakamoto discloses an optical information reproducing apparatus for recording or reproducing information on/from an optical disk using an optical spot (see col. 4, lines 34-41), and which controls rotation of the optical disk so as to provide a constant linear velocity by changing a rotation frequency in accordance with a radial-direction position of the optical spot (see Fig. 1, elements 19-20, note: "to provide a constant linear velocity by changing a rotation frequency in accordance with a radial-direction position of the optical spot", see Sakamoto discloses a change a rotation frequency in accordance with a radial-direction position of the optical spot, see col. 11, lines 19-49), said apparatus comprising: a rotation control circuit that controls rotation of the optical disk (see Fig. 1, element 19); a focus servo control circuit and a tracking servo control circuit for the optical spot (see Fig. 1, element 160 and col. 4, lines 49-56); and a tracking control circuit that adjusts a servo-loop gain for tracking servo control in accordance with the radial-direction position of the optical spot (see col. 4, lines 49-53).

Regarding claim 2, see Figs. 4, 6, discloses an apparatus according to claim 1, wherein said tracking control circuit adjusts the servo-loop gain in accordance with a steady state rotation frequency at the radial-direction position of the optical spot.

Regarding claim 11, see Figs. 1, 4 and col. 15, lines 57-67, discloses an apparatus according to claim 1, wherein said tracking control circuit adjusts the servo-loop gain in accordance with a transient change of the rotation frequency caused by movement of the optical spot in a radial direction.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3, 4-6, 8, 13-16, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (US 6,606, 284) in view of the admitted art.

Regarding claims 3 and 8, Sakamoto discloses an apparatus according to claim 1, wherein a recording region of the optical disk is in a radial direction (see Fig. 5 and col. 4, lines 34-56). However, Sakamoto does not disclose that said rotation control circuit controls rotation of the optical disk so that a linear velocity is substantially constant between respective zones by changing the rotation frequency for each zone, and said tracking control circuit adjusts the servo-loop gain in accordance with a steady state rotation frequency for each zone, but Sakamoto does disclose tracking control circuit adjusts the servo-loop gain in accordance with a steady state rotation frequency (see Fig. 6).

The admitted art discloses an optical information reproducing apparatus for recording or reproducing information on/from an optical disk using an optical spot, wherein a recording region of the optical disk is divided into a plurality of zones in a radial direction (see the admitted art [0004], [0010]), said rotation control circuit controls rotation of the optical disk so that a linear velocity is substantially constant between respective zones by changing the rotation frequency for each zone, and said tracking control circuit adjusts the servo-loop gain in accordance with a steady state rotation frequency for each zone or block (see [0010], note: this process the admitted art was called a CLV or MCLV method, and inherently there are plurality of zone so there would have at least a block).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide CLV or MCLV method in Sakamoto as suggested by the admitted art, the motivation being in order to have the rotation frequency is highest at the outer circumference in a radial direction and deceases toward the outer circumference (see the admitted art [0010]).

Regarding claim 4, Sakamoto discloses an apparatus according to claim 1, and discloses a tracking control circuit adjusts the servo-loop gain. However, Sakamoto does not disclose a tracking control circuit adjusts the servo-loop gain by setting a gain proportional to an eccentric acceleration corresponding to the radial-direction position of the optical spot.

The admitted art discloses an apparatus according to claim 1, wherein said tracking control circuit adjusts the servo-loop gain by setting a gain proportional to an eccentric acceleration corresponding to the radial-direction position of the optical spot (see [0011]-[0012] and Figs. 7-8).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a gain proportional to an eccentric acceleration corresponding to the radial-direction of the optical spot in Sakamoto as suggested by the admitted art, the motivation being in order to have the rotation frequency is highest at the outer circumference in a radial direction and deceases toward the outer circumference (see the admitted art [0010]).

Regarding claim 5, Sakamoto discloses an apparatus according to claim 1, a tracking servo control circuit (see Fig. 1) that adjust a servo-loop gain for tracking servo control in accordance with the radial direction position of the optical spot. However, Sakamoto does not disclose a tracking servo control is controlled by a sampling frequency that changes in accordance with the radial-direction position of the optical spot, and wherein said tracking control circuit performs gain adjustment in accordance with the radial-direction position of the optical spot in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed.

The admitted art, see Figs. 6(11)-8, discloses an apparatus which has a tracking servo control circuit is controlled by a sampling frequency, and wherein said tracking control circuit performs gain adjustment in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed (see [0011]).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a tracking servo control circuit is controlled by a sampling frequency, and wherein said tracking control circuit performs gain adjustment in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed in Sakamoto as suggested by the admitted art, the motivation being in order to be able to perform

control within a control error range desired for recording and reproducing (see the admitted art [0011]).

Regarding claim 6, Sakamoto discloses an apparatus according to claim 1, a tracking servo control circuit (see Fig. 1) that adjust a servo-loop gain for tracking servo control in accordance with the radial direction position of the optical spot (see col. 4, lines 34-56). However, Sakamoto does not disclose a tracking servo control is a sample servo disk having a servo region provided radially from the center of the optical disk, and wherein said tracking control circuit performs gain adjustment in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed.

The admitted art discloses an apparatus which has the optical disk is a sample servo disk having a servo region provided radially from the center of the optical disk (see the admitted art [0019 and Figs. 7-8), and wherein said tracking control circuit performs gain adjustment in accordance with the radial-direction position of the optical spot in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed (see the admitted art [0019] and Fig. 6, element 11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide tracking control circuit is a sample servo disk having a servo region provided radially from the center of the optical disk and performs gain adjustment in a state in which a coefficient of a phase compensation filter included in said tracking servo control circuit is fixed in Sakamoto as suggested by the admitted art, the motivation being in order to be able to perform control within a control error range desired for recording and reproducing (see the admitted art [0011]).

Regarding claim 13, see rejection above of claim 2.

Regarding claim 14, see rejection above of claim 3.

Regarding claim 15, see rejection above of claim 4.

Regarding claim 16, see rejection above of claim 5.

Regarding claim 18, see rejection above of claim 3.

Regarding claim 21 see rejection above of claim 11.

5. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. (US 6,606,284).

Regarding claim 12, see rejection above of claim 1 and Sakamoto discloses and a focus control circuit that adjusts a servo-loop gain for focus servo control in accordance with the direction perpendicular to the information of the recording medium at the irradiation position of the optical spot instead of the radial direction which is applied to the tracking error signal. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use adjusts a servo loop gain for focus servo control in accordance with the radial direction position of the optical spot in Sakamoto and apply the same to the focus control circuit, the motivation being in order to be have signal indicative of a deviation from the record track in a radial direction (see Sakamoto col. 4, line 67).

Allowable Subject Matter

6. Claims 7, 9-10, 17 and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 7, 17 are allowable over prior art of record since it does not disclose or suggest all of the limitations of claims 7 or 17 as well as the limitation that **tracking servo control circuit is controlled with a constant sampling period in the entire region of the optical disk, and wherein said tracking control circuit adjusts the servo-loop gain by adjusting a coefficient of a phase compensation filter included in said tracking servo control circuit and a gain in accordance with the radial-direction position of the optical spot.**

Claims 9, 19 are allowable over prior art of record since it does not disclose or suggest all of the limitations of claims 9 or 19 as well as the limitation that **tracking control circuit adjusts the servo-loop gain so that when a servo gain at a highest rotation frequency Wmax is represented by Gmax, and a rotation frequency is represented by Wcurr, a servo gain Gcurr satisfies the following relationship: Gcurr.apprxeq.Gmax.times.Wcurr/Wmax.**

Claims 10, 20 are allowable over prior art of record since it does not disclose or suggest all of the limitations of claims 10 or 20 as well as the limitation that **focus servo control circuit comprises a circuit that adjusts a servo-loop gain for focus servo control, and wherein, when said tracking control circuit changes the servo-loop gain for tracking servo control with a predetermined ratio, said focus control circuit changes the servo-loop gain for focusing servo control with a ratio proportional to the square root of the predetermined ratio.**

Cited References

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references relate to

a. Gain controlling apparatus (Sakamoto et al. US 6,606,284).

b. Apparatus for controlling bias amount of focus error signal (Bradshaw et al. US 5,751,674).

c. Optical disk apparatus capable of correcting tracking error (Shimada US 6,894,957).

d. Servo control apparatus for controlling position of device (Naohara US 5,896,353).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN T. PHAM whose telephone number is 571-272-7590. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HOA T. NGUYEN can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VP

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1/26/06